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penditure during rapid walking is largely due to the swinging of the arms. In running they find that a great part of the energy is consumed in the up-and-down motion of the body. They point out that the elimination of these factors is the line along which economy of energy is to be obtained.

In the "Physiology of the New-Born Infant" Benedict and Talbot include a translation of an important paper by Hasselbalch hitherto not generally accessible. Hasselbalch concludes that a well-nourished infant born at full term has a store of carbohydrates upon which it draws during the first few hours of life with a respiratory quotient well up toward unity. Thereafter for a time the respiratory quotient is lower and the metabolism approaches a fasting character. These striking results are not fully confirmed by Benedict and Talbot. Although in some cases they also find a decidedly high respiratory quotient, they suggest that it is due to an excessive blowing off of carbon dioxide during crying. They demonstrate the relatively great amount of energy which an infant expends in this exercise, and point out that even under normal conditions the mother never supplies sufficient nutriment to balance the infant's output during the first few days after birth. They emphasize the importance of keeping the newborn infant from crying, and so far as possible from any muscular exertion, in order to conserve its initial store of energy.

In the introduction to this work the authors complain of "a disposition on the part of some investigators to relieve us of the responsibility of interpreting certain of our results." The reviewer has not ascertained who these culprits are, or the extent of their fault. He is inclined to offer as a defense for them, however, that the one defect of the splendid publications which come from the Carnegie Nutrition Laboratory is that they are confined in most cases too largely to a statement of the methods and experimental results, without summaries or even emphatic textual indications of the opinions which the investigators themselves have reached. Most authors who write thus receive the just punishment of

being unread. It is only for work of the highest order that the sentence is commuted to mere misinterpretation.

YANDELL HENDERSON

PHYSIOLOGICAL LABORATORY,  
YALE MEDICAL SCHOOL

*An Introduction to Neurology.* By CHARLES JUDSON HERRICK. Philadelphia, The W. B. Saunders Company, 1915. Pp. 355, 137 figs.

This work is an example of marked success in the accomplishment of a difficult task. In dealing with such a subject as the nervous system it is probably easier to write a small book or a very large one than to produce a valuable one of medium size. One can write a short account of the mechanism, shirking the intricacies of its structure, and emphasizing what is picturesque and entertaining. Or, by taking more time, one can prepare a voluminous and impersonal account of it which shall serve for reference rather than consecutive reading. To write a book which shall be quite minute as to detail and yet concise and readable is a severer test of a man's scholarship and power.

The book in hand meets the requirement. The material is arranged with unusual skill and the presentation is masterly. The distinction is less in the freshness of the facts than in the selection made and the clarity of exposition displayed. Without indulging in digression or sacrificing accuracy the author has given his work a literary quality which is refreshing. There is a geniality about it all which to an exceptional degree establishes a rapport between writer and reader.

Without offering any objection to the author's choice of terms it may be in order to express regret that biologists can not agree upon the significance of the "sympathetic system." Professor Herrick makes it as inclusive as possible, that is to say, equivalent to the autonomic system of Langley. It seems clear that physiologists generally hold to the other conception, making the sympathetic the thoracico-lumbar autonomic. We commonly say that the heart is inhibited by the vagus and accelerated by the sympathetic fibers, yet

the *vagus* belongs to the sympathetic in the broader sense.

The figures used in the book are largely new and in all cases well adapted to illustrate the descriptions in the text. P. G. STILES

### SPECIAL ARTICLES

#### THE BOTANICAL IDENTITY OF LIGNUM NEPHRITICUM

THE attention of the writer has just been called to the following criticism of his recent preliminary paper on *lignum nephriticum*, which appeared in *Nature*, Vol. 96, page 93, 1915.

The most recent contribution to the history of *lignum nephriticum* is published in the *Journal of the Washington Academy of Sciences* (Vol. V., No. 14, August 19, 1915) by Mr. W. E. Safford. He gives the name *Eysenhardtia polystachya* (Ortega) Sargent, to the tree, and states that its botanical identity has remained uncertain until the present time. This statement, however, is scarcely correct, since the tree was referred to the genus *Viborquia* by Ortega, a name superseded by the later name of *Eysenhardtia* of Humboldt, Bonpland and Kunth. These authors correctly named the plant *E. amorphoides* in 1823, and Mr. Safford, following Sargent, merely restores Ortega's old specific name, *Viborquia polystachya*, making *Eysenhardtia amorphoides* a synonym of *E. polystachya*.

The above criticism is quite misleading. It is true that the species in question was described by Ortega in 1798; but Ortega drew his description from a shrub growing in the Royal Botanical Garden of Madrid, which had been propagated from seed sent to the garden from Mexico. He had no idea that the plant he described had any connection with the classic *lignum nephriticum*; he did not know its Mexican name; indeed he was unaware that it might attain the dimensions of a tree. Humboldt, Bonpland and Kunth were likewise unaware that the plant described by Kunth as *Eysenhardtia amorphoides* was the source of *lignum nephriticum*, or that its wood would yield a fluorescent infusion. That its identity with the latter was unknown is shown by the definite statement of Sargent, when establishing the combination *Eysen-*

*hardtia polystachya*. Referring to *Eysenhardtia* he says:

The wood of some species is hard and close-grained and affords valuable fuel. The genus is not known to possess other useful properties.<sup>1</sup>

If the species described first by Ortega as *Viborquia polystachya* and later by Kunth as *Eysenhardtia amorphoides* was known to be the source of *lignum nephriticum*, a classic wood remarkable for the fluorescence of its infusion and at one time famous throughout Europe, why would not these authors have called attention to its identity?

The first to indicate its botanical identity, as the writer pointed out in his paper cited above, was Dr. Leonardo Oliva, professor of pharmacology in the University of Guadalajara (1854), but his identification was not accepted by subsequent authorities. Oliver and Hanbury, in the "Admiralty Manual of Scientific Inquiry" (page 391, 1871), call attention to the wood as follows:

*Lignum nephriticum*.—This rare wood, noticed by some of the earliest explorers of America, is a production of Mexico. To what tree is it to be referred? Its infusion is remarkable for having the blue tint seen in a solution of quinine.

In the third edition of the "Nueva Farmacopea Mexicana" (page 153, 1896) the statement is made that *leño nefritico* had been erroneously attributed to *Varennea polystachya*, or *Eysenhardtia amorphoides* H. B. K., but that its classification was not known. Dragendorff in his well-known *Heilpflanzen* (page 345, 1898) refers it to the genus *Guajacum*:

Das *Lignum nephriticum* der älteren Medicin wird wohl von einer *Guajacum*-Art stammen.

Dr. Otto Stapf, to whose historical paper on *lignum nephriticum* published in the "Kew Bulletin of Miscellaneous Information" (pages 293-305, 1909) the writer has already referred, experimented with a piece of wood from the Mexican collection in the Paris Exposition, bearing the label "Cuatl." Dr. Stapf referred this wood to *Eysenhardtia*

<sup>1</sup> Sargent, C. S., "The Silva of North America," Vol. 3, p. 30, 1892.